



LifeView User Manual

Document Date: 2015-12-22

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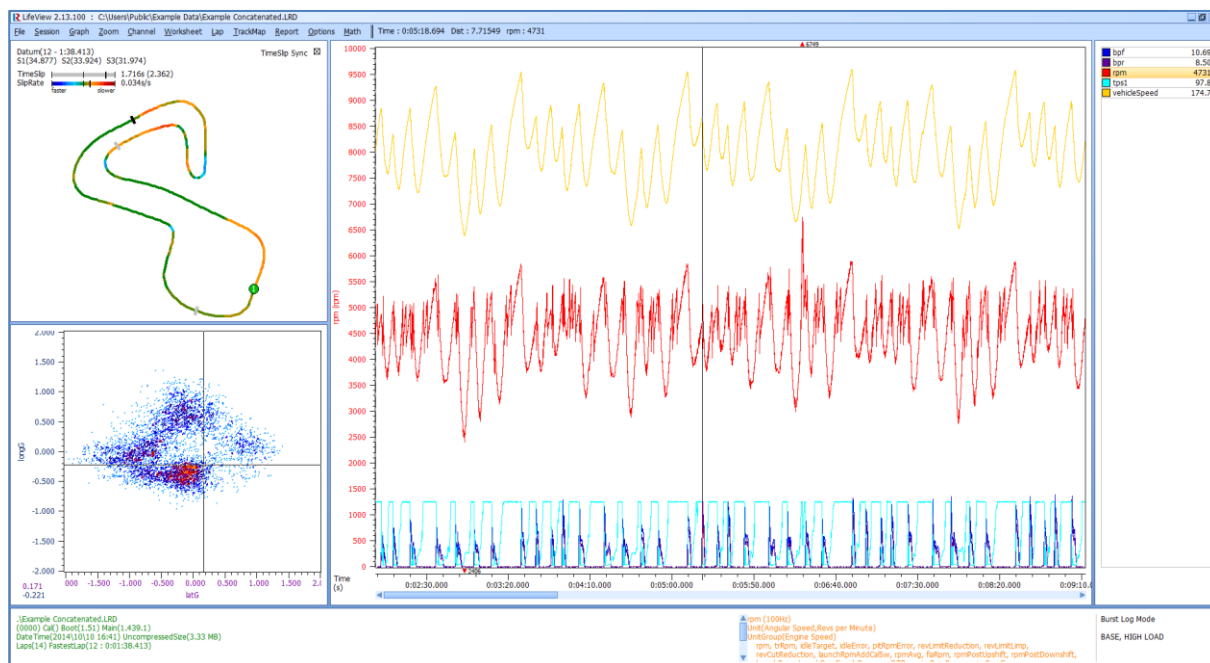


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1 Introduction

LifeView is a data viewing application. Downloaded .LRD files can be analysed here with the use of intelligent visual representation.



Due to continuous development, some features may change and this manual will update periodically. Please ensure you have the latest version dated on the cover page of this document.

Information Panel

The Information Panel is displayed at the bottom of the screen and can be toggled with the <F1> key. It displays:

File location, name, time stamp and size
ECU serial number, Calibration and code levels
No of laps and fastest lap
Saved comments

Highlighted channel
name, frequency, unit
and unit group

Highlighted
channel
burst logging
state

Menu Shortcuts

Life Racing applications are intended for quick operation without the use of a mouse for improved usability in the pit lane. All menu buttons can therefore be reached using keyboard shortcuts. Each option has an underlined letter, identifying its shortcut key or the shortcut displayed to the left. Dialogue boxes can be navigated with the arrow keys. The <Spacebar> can be used to select while <Enter> and <Esc> are used as OK and CANCEL respectively.

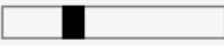
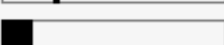
2 Files

2.1 Load/Import

.LRD

To load data, select *File, Load* and locate the chosen file. File name and size is displayed as well as a time bar that shows the timing in comparison to other files in the same folder. Time bars will alternate in colour for different sessions determined by the time difference between them. Highlight a file to display further details including device details, lap details and any comments. Multiple files can be opened at once and stitched together (concatenated) in the software with or without time gaps. This is done using the <Shift> key to select consecutive files. A dashed line in the graphical display indicates the beginning of a new data set.

Select *File, Load another* to overlay multiple files on the same display to allow comparisons. Overlaid files can also be concatenated.

	1	Example Concatenated.LRD		2.57 MB
	2	Example E.LRD		1.79 MB
	3	Example D.LRD		485 KB
	4	Example C.LRD		280 KB
	5	Example B.LRD		299 KB
	6	Example A.LRD		466 KB
	7	Example 3.LRD		372 KB
	8	Example 2.LRD		1.26 MB
	9	Example 1.LRD		1.50 MB
	.	..		
	\	DESKTOP		
	/	WORKING DIRECTORY		
	C	Local Disk (C:)		
	D	DVD RW Drive (D:)		

.CSV

LifeView can be used to view data from other sources by importing a comma separated .csv file. This can be useful in instances such as comparing real data to imported simulation.

This is done under *File, Import CSV*. Select the file and define the 'time' field as well as all fields that are to be imported. Imported files must have a time field to use as an x-axis reference. Files are imported alongside currently open files to allow overlays.

There is some limited functionality as special channels cannot be configured outside of an LRD file. Channels can however still make full use of math functions and graphical representation.

.LB

LifeView can also be used to view and export .LB logbook files. To view these select *File, Load logbook* and select the folder location. This will load all .LB files in the selected folder. These can be viewed as an overall record or as a per run entry.

The Comment option is unavailable in LifeView as logbook comments cannot be edited once the .LB has been downloaded. Comments can only be added to a logbook whilst it remains in an ECU. This can only be done when connected in LifeCal or LifeData.

F88 #6642 BOOT(1.51) CODE(1.439.1)	
☒ Logbook Overall Record	2014/03/28 08:02:59
☐ Logbook Per Run Entry	
Over-Rev Engine Speed (rpm)	7000
On-Load Engine Speed (rpm)	2500
On-Load Throttle Position (%)	30.00
On-Load Vehicle Speed (kph)	60.0
Engine Run Time (s)	174103.41
Engine On-Load Time (s)	96948.63
Engine On-Load Cycles	3827392
Distance Travelled (km)	3741.53
Number of Off-Load Overrevs	2
Maximum Off-Load Engine Speed (rpm)	7204
Number of On-Load Overrevs	35
Maximum On-Load Engine Speed (rpm)	7466
Number of Lap Beacons	1082
Number of Engine Oil Pressure Dips	17
Number of Engine Oil Pressure Trips	7
Number of Crank Case Pressure Trips	0
Number of Engine Oil Temperature Trips	0
Number of Engine Coolant Temperature Trips	0
Number of Fuel Pressure Trips	0
Number of Low Battery Voltage Trips	2
Number of Lean-On-Load Trips	0
▶ Minimum Engine Coolant Temperature (°C)	
▶ Minimum Engine Oil Temperature (°C)	
▶ Minimum Engine Oil Pressure (mBar)	
▶ On-Load Engine Coolant Temperature (s)	
▶ On-Load Engine Oil Temperature (s)	
▶ On-Load Engine Oil Pressure (s)	
▶ On-Load Battery Voltage (s)	
Maximum ECU Temperature (°C)	450
Logbook Comment	[NO COMMENT SET]

Select *Export* to save a text file containing the currently displayed information, whether it is the overall record or an individual run.

Select *exportAll* for a text file including all runs and the overall record.

Select *Run Sheet* for a tab delimited text file containing every run. This is the easiest exportation for loading in another program.

Selecting *change Units* will change the units of the entire unit group. Note that this change will also affect normal LifeView channels.

2.2 Save/Export

Save

Saving a file will allow concatenated files to be permanently saved as a single file and any annotations or comments stored. To save, select *File, Save*, then *CREATE* for a new folder in the current location or *SELECT* to confirm the current folder as the desired location and then enter a new filename.

Select *Rename* to overwrite the current file with a new name. Default filename contains date and time at engine start, plus time to beginning of logging, ECU serial number and working directory stamp.

Select *save as Logging conFig* to retrieve an .LRL file with the original logging configuration. This is useful when the original file is lost or unavailable.

Export

Exporting a file will only export the selected channels in the visible time frame. Use *zoom to Selection* to select this time frame. Select *File, export To*, to export data as a text file (.txt or .csv) or as an LRD file under the same security as the original file or as an unprotected generic file.

Print

Select *File Print* to print the current display including cursor location and values.

2.3 Working Directory

The working directory is maintained across all Life Racing applications and can be edited in LifeCal, LifeCfg, LifeData, LifeView and PduSetup. To change the current working directory select *Working directory* under *File*. Use *CREATE* to create a new folder in the current location. Use *SELECT* to select the current location as the new working directory. If the location has not been used before, a .CFG file will be created. Selecting *Working Dir Behaviour* allows editing of the .CFG file.

C:\Users\Public\Example Data\

Known Devices

1001, "Example", "Car #01"

☐ Reverse folder order

Session Sub Directory

☐

☒ Use Date

Downloaded Data

☒ Use directory per session

☐ Use directory per device

Calibrations

☒ Use directory per session

☐ Use directory per device

Logging Setup

☒ Use directory per session

☐ Use directory per device

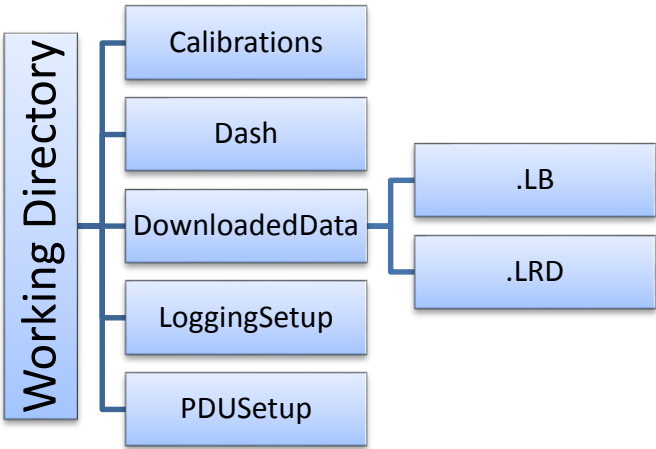
Devices that have been previously connected to are automatically added to the known devices list. They can also be manually added or imported from another working directory with the appropriate buttons. The ECU name will be used as a folder name if device directory is used. The suffix is included in file names.

Directories can be altered individually for calibrations, downloaded data and logging setup files. Tick use directory per device to separate files by ECU. Tick Use directory per session to use either the Date sub directory or a custom sub directory. A Date sub directory will automatically update and add folders when new data is downloaded.

Downloaded Data

☐ Use directory per session

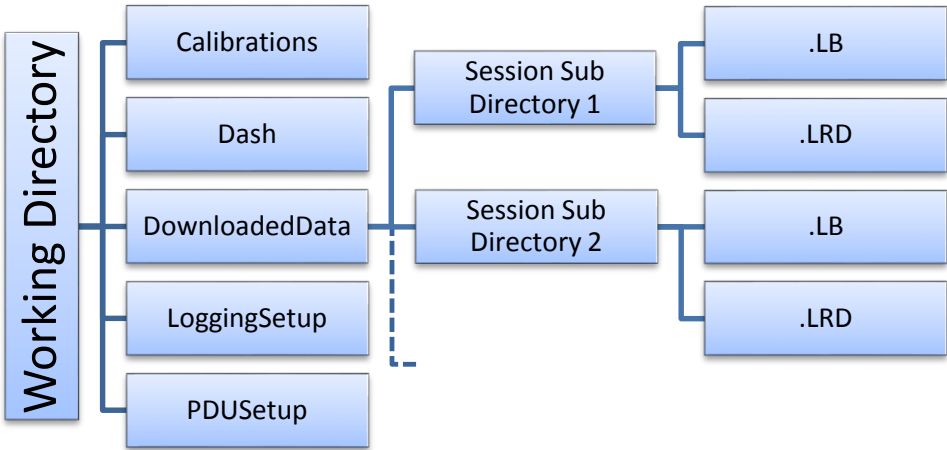
☐ Use directory per device



Downloaded Data

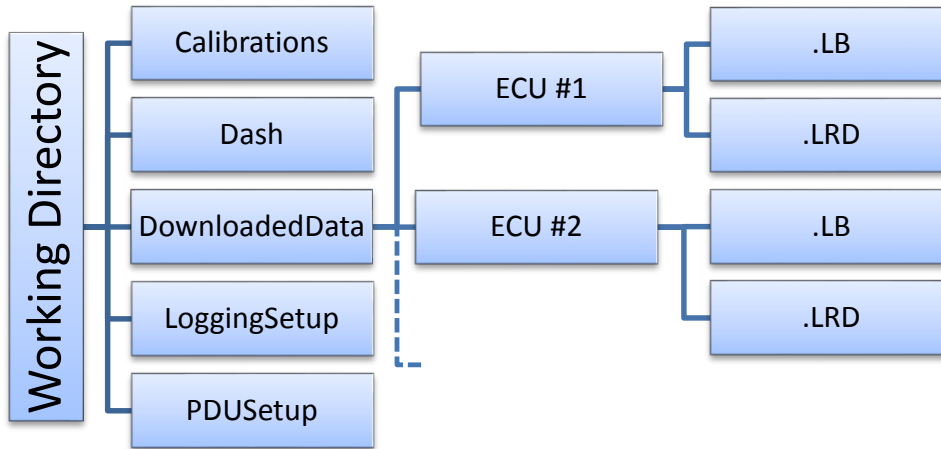
☒ Use directory per session

☐ Use directory per device



Downloaded Data

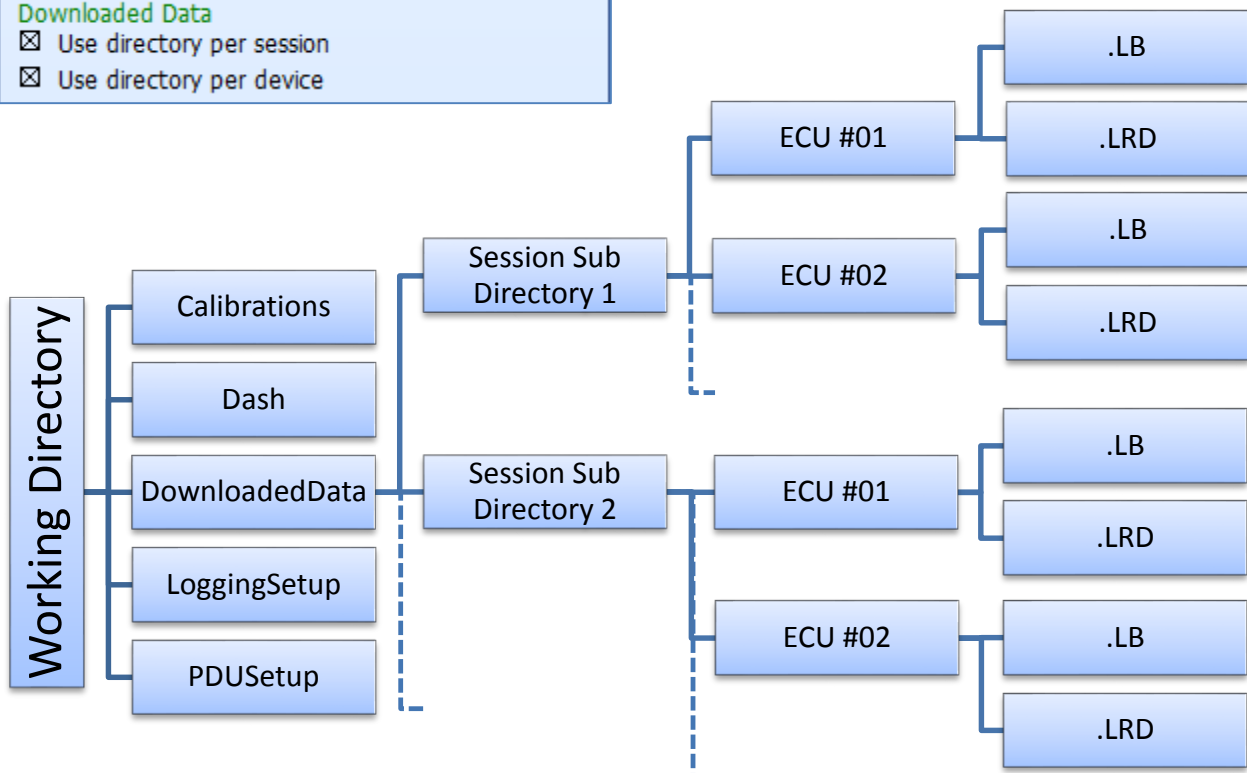
- ☐ Use directory per session
☒ Use directory per device

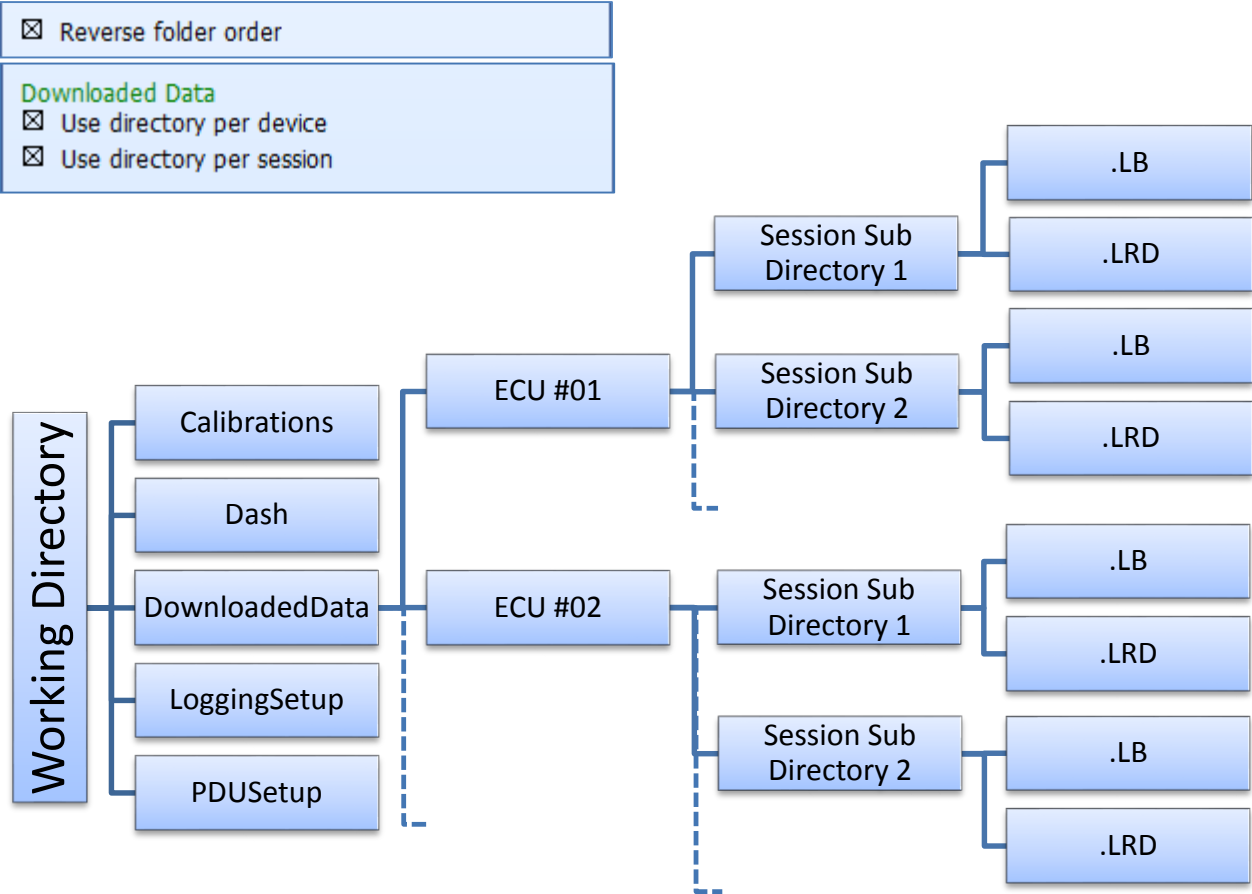


- ☐ Reverse folder order

Downloaded Data

- ☒ Use directory per session
☒ Use directory per device





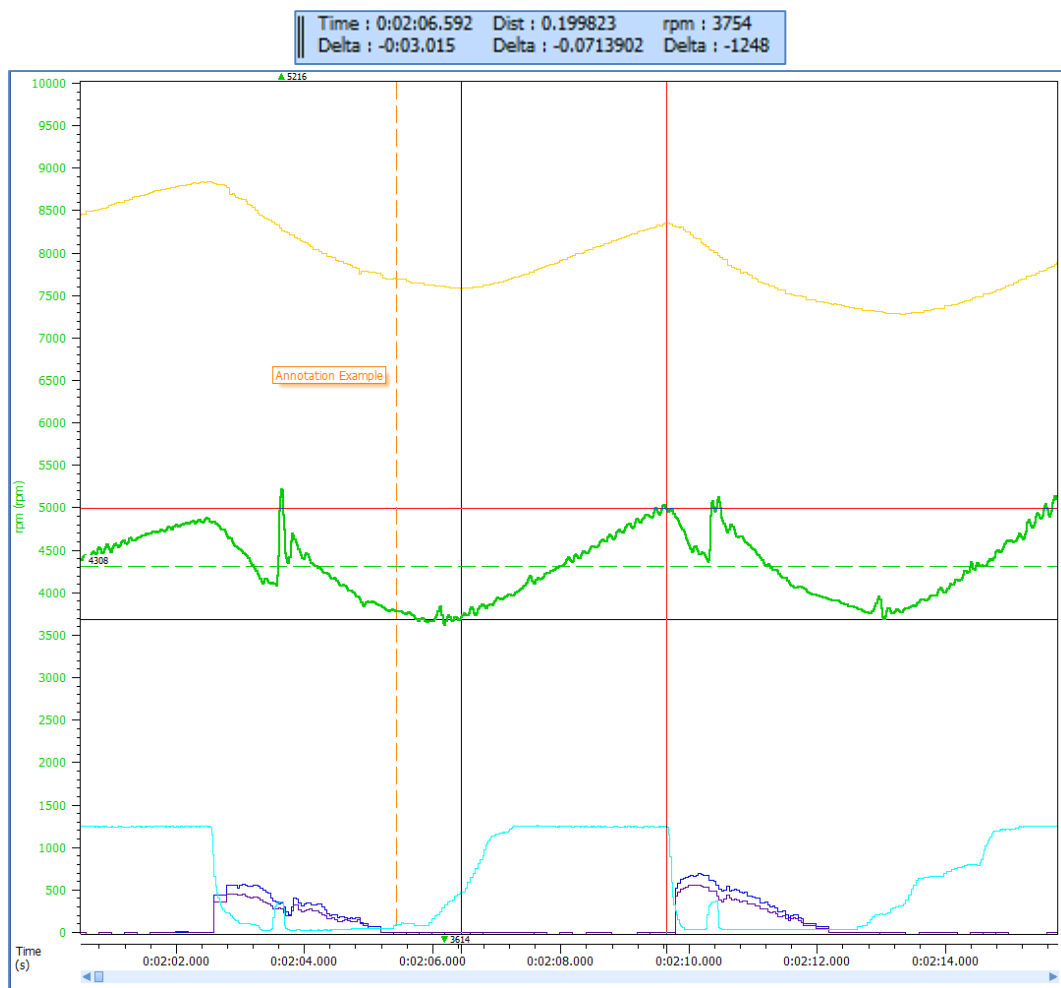
3 Graph

The graph is the primary display tool. It plots selected channels across the duration of the session by either distance or time (Toggled in the *Options* menu).

A cursor is used to navigate the data. Above the graph, numerical values at the current cursor location are given for time, distance and the selected channel. Placing a marker will also give delta values between the marker and cursor locations.

Optional visual aids include a crosshair at the highlighted channel data point, an average value or the minimum and maximum values for the visible data and more. These can be toggled in the *Options* menu.

Annotations will appear as dashed vertical lines at the selected sample location. Hover the mouse over these to display the text.



3.1 Navigation

The graphical area is designed to allow quick and easy navigation of potentially large amounts of data. Both the keyboard and mouse can be used individually or together to achieve this.

Mouse

Left Click	Place cursor
Right Click	Place marker
Left Drag	Move cursor
Right Drag	Zoom to selection
Scroll	Zoom X-axis
Ctrl Scroll	Zoom Y-axis
Double Click	Add/edit annotation
Drag Y-Axis	Move axis maximum
Ctrl Drag Y-Axis	Move axis minimum
Shift Drag Y-Axis	Move entire axis

Keyboard

<Left>	Move accelerating cursor to left
<Right>	Move accelerating cursor to right
[	Move cursor left to previous different value
]	Move cursor right to next different value
<	Move cursor to previous alarm position
>	Move cursor to next alarm position
<F6>	Move cursor to minimum visible value
<F7>	Move cursor to maximum visible value
<Ctrl> + <Left>	Move cursor to left by 10% of screen
<Ctrl> + <Right>	Move cursor to right by 10% of screen
<Shift> + <Left>	Accelerating scroll to left
<Shift> + <Right>	Accelerating scroll to right
<Plus>	Zoom in X-axis
<Minus>	Zoom out X-axis
<Ctrl> + <Plus>	Zoom in Y-axis
<Ctrl> + <Minus>	Zoom out Y-axis
<Tab>	Toggle graph focus when multiple graphs are open
<Space>	Place marker
<Backspace>	Remove marker

The Zoom menu can also be utilised with its shortcuts to *Zoom To Selection*, *Zoom Previous* or *Zoom Right Out*.

Certain options such as cursor acceleration and right click zooming can be toggled, depending on user preference when navigating.

3.2 Channels

Channels include all monitoring items and added math functions. These are displayed in the 'Key', to the right of the graphical display. The Key has two modes of operation, selectable in the options menu. The normal mode shows all the channels in a data file. It gives the value of each channel at the current cursor position. Channels that are shown in one of the graphs also have a colour tab to show their respective trace colours. The alternative mode only shows those channels displayed in the graphical display area. If more than one graph is displayed, there will be separated lists for each. The information panel will display which file the highlighted channel is from.

LAP	2 - 1:40.789
☐ TimeSlip(11)	0.236
☐ act1	41.9
☐ bap	989
☒ bpf	-0.02
☒ bpr	0.00
☐ btMax	34.4
☐ calibrationState	RUNNING AS PROGRAMMED
☐ camRaw	688.25
☐ cilEnable	BANK1
☐ cilError1	1.877
☐ cil1	0.0
☐ cilP1	0.0
☐ cilTarg1	0.960
☐ cyl01Knock	3.9
☐ cyl01KnockIgnRtd	0.00
☐ cyl01KnockThresh	9.0
☐ cyl02Knock	4.2

bpf	-0.02
bpr	0.00
rpm	4894
tps1	98.0
vehicleSpeed	71.6

Key navigation uses a different set of shortcuts to graph navigation, allowing simultaneous use.

<Up>	Up one channel
<Down>	Down one channel
<Page Up>	Up page of channels
<Page Down>	Down page of channels
<Return>	Add/Remove channel on focus graph
<Right Shift>	Toggle between data files when more than one loaded
<Delete>	Remove math channel

The Channel menu displays the same options as right clicking a channel in the key:

Add

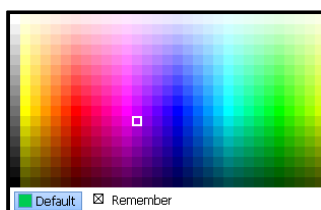
Add a channel to the active graph. Select from the list or begin typing the name of the desired channel to shorten the list.

Remove

Remove the highlighted channel from the active graph.

Colour

Change the colour of the channels data trace. Tick remember to use the selected colour as default for all files.



Scale

Auto scale sets the minimum and maximum scale values to the minimum and maximum found in the data.

Set scale allows custom minimum and maximum values. Tick the remember box to set the new scale as default. Remember current scale can also be used.

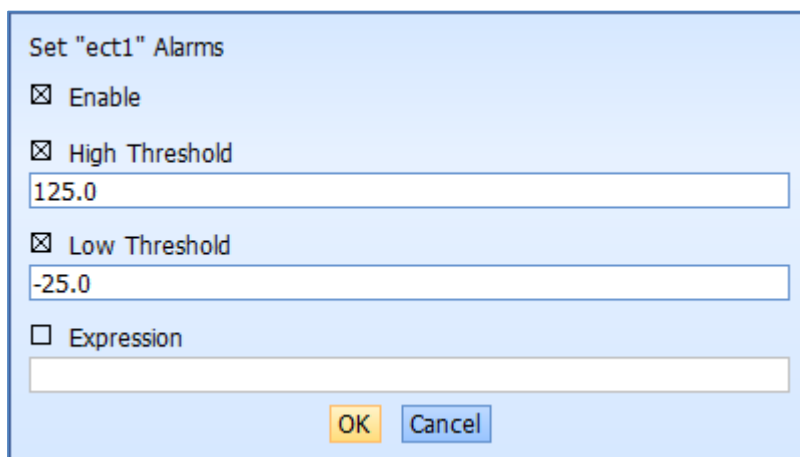
The Scale can also be edited by right clicking the y-axis in the graph area.

Filter

Add a new trace containing the filtered values of the highlighted channel. This will not be available for channels logged at 1Hz.

AlarMs

Set thresholds for the selected channel. Thresholds will be displayed as dashed lines at the set values. When these values are exceeded, the channel will flash in the key. Alarms are only monitored in the visible time frame.



The image shows a dialog box titled "Set 'ect1' Alarms". It contains four checked checkboxes: "Enable", "High Threshold", and "Low Threshold", and one unchecked checkbox: "Expression". Below "High Threshold" is a text input field containing "125.0". Below "Low Threshold" is a text input field containing "-25.0". Below "Expression" is an empty text input field. At the bottom right are "OK" and "Cancel" buttons.

Sample Average Limits

Set the upper and lower limits of values to be used in Averaged Samples Mode calculations.

Change Units

Change the display unit of all items in unit group. If a single unit change is desired, a math channel can be used to achieve this. Note that units are universal across files and applications.

Edit Math

Open the math window for the selected math item.

Delete Math

Remove the math channel from the display and key.

3.3 Math

Math can provide a wide range of further data manipulation varying from simple scaling to complex, multi-function expressions. Choose a new or existing maths expression from the *Math* menu to open the Math Window. The Math window enables the adding and editing of math channels. Once added, the math channels behave the same as data channels with the additional right click options of editing and removing. Delete a maths expression by highlighting it and pressing the <Delete> key on the keyboard.

Name

Create a channel name for your maths channel. Must not contain these characters:

Full Stop	.	Less than	<
Forward slash	/	More than	>
Back slash	\	Vertical bar	
Colon	:	Quotation marks	"

Expression

Type your maths expression here. Expressions can include any monitoring item or other maths channel. Take care when adding channels as they are case sensitive. Error hints will appear when the expression is invalid. Right click this box to cut, copy or paste.

Functions

This list contains all functions available in alphabetical order. Highlighting a function will display an explanation. Double clicking or using the <Space> bar will paste the function into your expression.

The full list of functions and details on how they are used can be found in the Math Manual, available for download from www.liferacing.com under Support, User Manuals/Datasheets.

Units

Select the unit group and unit that the result will be outputted in. This will display on the y axis label.

Auto Scaling

Tick box to enable auto scaling or type custom min max values for y axis. Auto scale will use the max and min values of results as the scale max and min.

Dec Places

Type the number of decimal places to be displayed in results. This is a visual option only and does not affect calculation accuracy.

Auto Sample Rate

Tick box for automatic sample rate. This will use the highest sample rate of the items used in the expression. It will also follow burst logging rates. For custom sample rate, type in the box how many times a sample should be taken in a second.

User Sample Offset

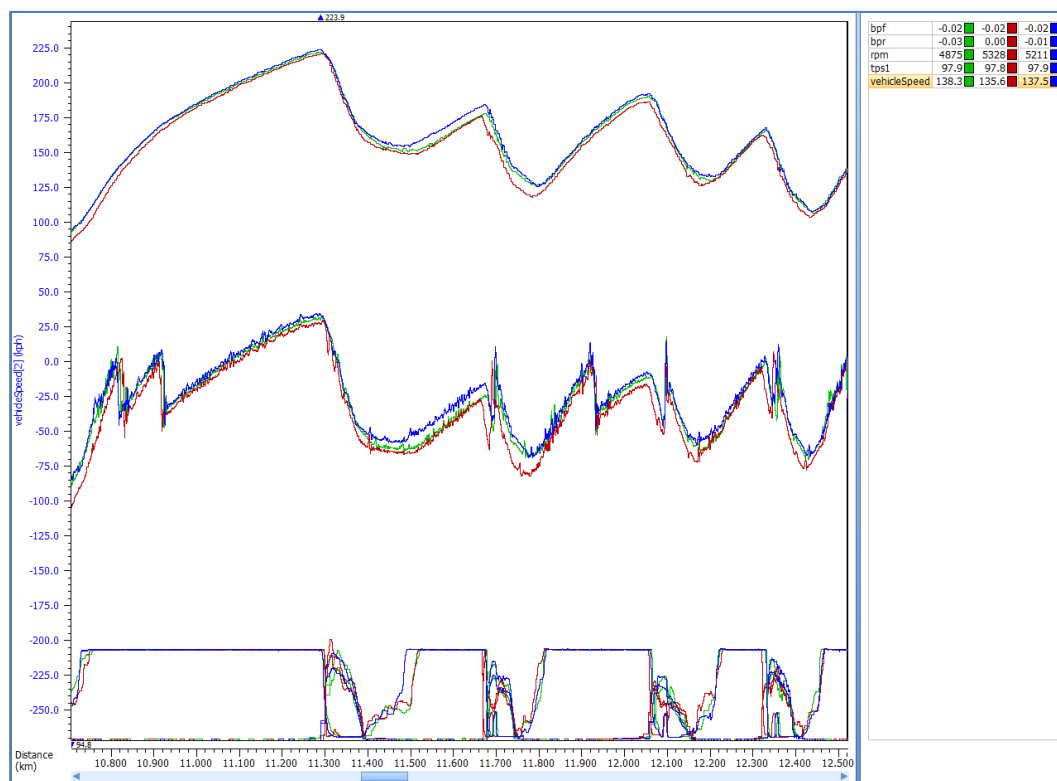
Maths channels can create delays when referencing multiple points. Sample offset allows the shifting of data by the typed number of samples. Number of samples must be less than sample rate.

3.1 Lap Mode

Lap mode causes the program to treat the selected lap as an entire file and will temporarily display only the selected lap. Select any lap from the Lap menu to enter lap mode. From the same menu, any other lap can be displayed or lap mode switched off. This is most useful when multiple files are open. If properly overlaid, a lap can be selected from one dataset while the other does not change, allowing easy lap comparisons.

3.2 Multiple Files

The *load anOther* option in the *File* menu allows multiple sets of data to be compared on the same display. The key will display each data set in separate columns with a differing colour assigned to all of its items by default (Can be switched off in *Options*). Hold the left <Shift> key and drag on the graphical display to offset an added file. Return any additional open files to their original positions by selecting *Session, Reset Offsets*. Multiple files are easier to compare in distance mode rather than time to account for the differing lap times.



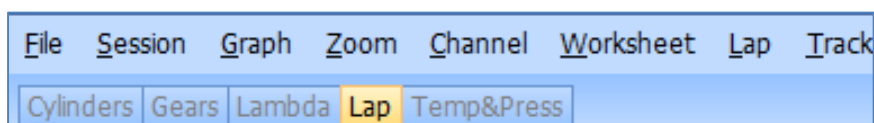
4 Worksheet

A worksheet is a saved layout design including graphs, track maps, reports and active channels. These can then be used with any future set of data. Worksheets are saved and opened in the *Worksheet* menu. Save a new worksheet with *Save* and type a name, or an existing worksheet with *Overwrite*. Worksheets can be renamed with *Rename worksheet* and deleted with the <Delete> key. The worksheet set as default will be automatically used when a file is opened and is marked with an asterisk (*). Others can be selected in the same menu with its numerical shortcut.

4.1 Workbooks

Workbooks allow worksheets to be grouped together. By default, a single workbook named “default” is created. To create a new workbook, set a new default, rename or delete an existing workbook use the corresponding menu options in the same way as worksheets. Workbooks are saved automatically. Worksheets can be copied from one workbook to another with *Add worksheet to workbook*.

A workbook will display all of the worksheets contained as tabs. These can be toggled with *enable/disable Tabbed worksheet*. This allows quick transition between pages by selecting the relevant tab.



Workbooks can be imported and exported to allow the transfer of worksheets to other computers. Select *Worksheet, Export Workbook* to create a file in a chosen destination. This file can then be transferred and imported by another user with *Import Workbook*.

4.2 Graphs

Additional graphs can be added to worksheets under the *Graph* menu. Multiple graphs are displayed vertically so they can share the same x-axis. Graphs can be resized but as they share an x-axis will remain equal width. Selecting *Graph, Tile* will evenly distribute allocated height. The active graph and channel in the active key (alternative key style) will be highlighted and can be switched between with the <TAB> key.

4.3 Reports

Reports are added from the *Report* menu. A separate window will be opened where the report can be edited. From here, reports can be printed, exported or docked in the worksheet.

Reports will only display information from the currently visible data so ensure the graph is zoomed to the data range desired.

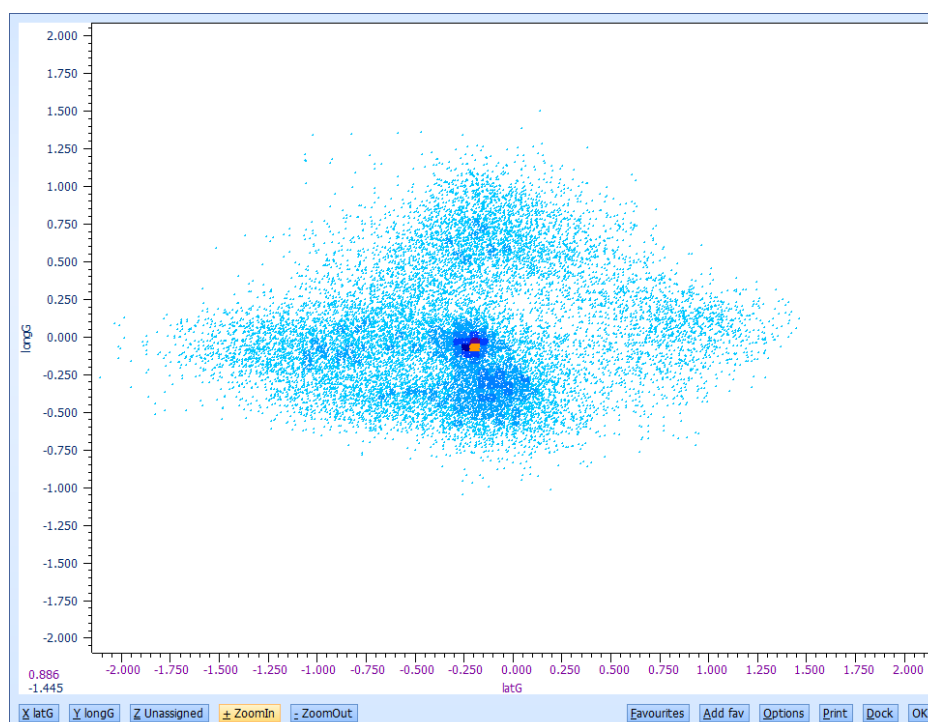
4.3.1 Lap Report

This report can only be used by a single file. With multiple files loaded, only the first file [0] is used. Lap reports display max min and average values for either displayed channels or all channels across each lap. Select Dump to save a text file.

	Out Lap 0:36.380 Min	Max	Avg	Lap 1 1:42.516 Min	Max
gearV	3.309	4.848	4.125	2.761	4.844
rpm	3578	5556	4544	2406	5838
trqFuelSev	0.0	100.0	31.2	0.0	100.0
trqIgnRtd	0.00	12.00	1.46	0.00	12.00
map1	148	2233	1815	148	2277
map1DT	-4220	2400	-35	-5000	2610
tps1	2.0	99.0	66.2	2.0	99.1
lam1	0.756	2.918	1.027	0.714	2.985
vehicleSpeed	99.7	202.6	145.8	57.2	219.2
cy01Knock	3.4	11.0	5.6	3.1	11.6
cy02Knock	3.3	11.2	5.8	2.7	11.9
cy03Knock	4.4	18.1	8.7	4.1	18.2
cy04Knock	3.1	9.8	5.8	3.1	10.4
wg3ErrPct1	-14.7	32.2	-0.4	-15.7	32.4
wgIntDuty1	-0.7	3.4	0.6	-0.7	7.3
wgBaseDuty1	0.0	67.6	52.1	0.0	67.0
wgFinalDuty1	0.0	74.5	53.7	0.0	81.0
gearBlpInputV	1.227	3.578	2.469	1.031	3.597
wgIgnRtd1	0.00	5.75	0.10	0.00	5.75
frSpeed	99.7	202.2	143.5	57.2	219.1
frSpeed	97.7	202.6	142.9	53.9	219.2
fuelMltCl1	0.800	1.167	0.996	0.800	1.138
clError1	-0.199	1.954	0.090	-0.241	2.009
swa	-25.2	45.6	1.2	-74.1	68.4
dbwTargBlp	0.00	30.00	1.20	0.00	30.00
wgMapTarg1	0	2204	1718	0	2222
wgMapErr1	-1223	657	-61	-1251	669
cy01KnockThresh	8.9	12.1	10.3	8.9	13.3
cy02KnockThresh	8.8	13.4	10.6	8.8	13.5
cy03KnockThresh	9.2	21.6	15.7	8.6	21.7
cy04KnockThresh	9.0	13.4	10.8	9.0	14.0
bpf	-0.04	20.89	5.59	-0.04	30.00
bpr	-0.03	17.31	4.47	-0.05	23.92
engTrqEstMotor	0.0	258.1	179.6	0.0	258.3
eop1	2475	2873	2665	2370	2922

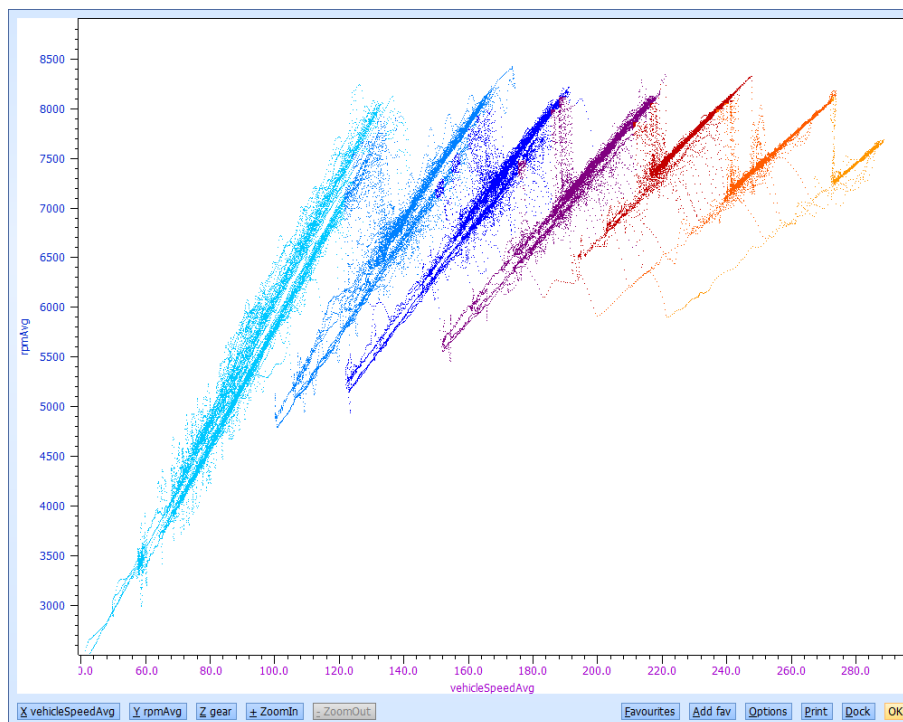
4.3.2 XY Plot

An XY plot allows any channel to be assigned to either axis to produce a scatter graph. Selecting Report, XY Plot will open a new window with a blank plot.



Assign each axis with the relevant button. The XY axes can be swapped under *Options*, *Swap XY*. Colours appear darker where data is more concentrated. Numerical values can be seen for each axis in the bottom left hand corner.

A second Y-axis or a Z-axis can also be added. The second Y-axis will use the same scale as the first but be displayed in a different colour. A Z-axis utilizes colour banding to display different values.



The same channels from different files can be overlaid under *Options*, *Toggle Overlay Mode*. Each file will display in a different colour. Select *Reverse Overlay Order* to change which file is viewed on top. Overlay mode only works for a single Y-axis and no Z-axis.

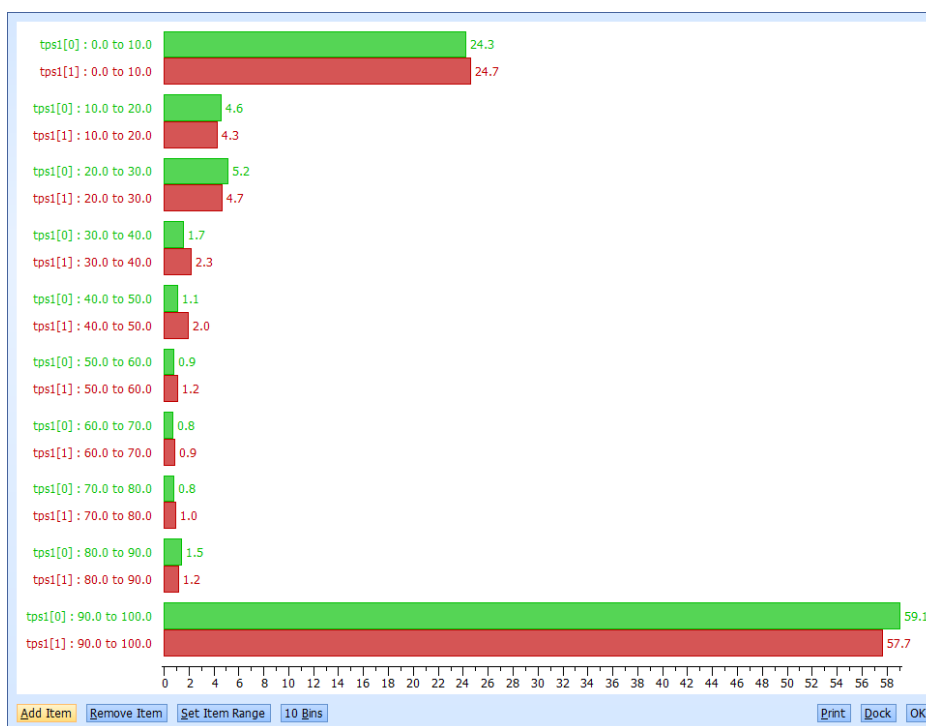
The plot can be resized by either zooming or moving the scales in the same way as the main graph. Right click the scales for more precise control. When data is highly magnified or when there are fewer data points it is recommended that intensity is increased for easier viewing under *Options*, *Intensity*. Colour can also be changed to greyscale with the *Toggle Colour/Grey* option. This cannot be toggled when overlay or multiple Y-axes are being used.

Save an XY plot layout as a favourite to quickly reload them when required.

Select *Print* to print report, *Dock* to add report to the worksheet and *OK* to close.

4.3.3 Histogram

A histogram shows the percentage of time an item is within certain value ranges. Added items will be displayed in the colour set in the Key. Item ranges and the number of ranges can be altered with the appropriate buttons. Select Print to print report, Dock to add report to the worksheet and OK to close. Once docked, the active range at the cursor location will be highlighted.



4.3.4 2D Histogram

A 2D Histogram shows percentages like the normal histogram but measures two parameters. Each parameter can have its ranges individually altered by selecting that item. Save commonly used items and ranges as favourites to quickly reload them when required. Colours are graded for easier visualization. Select Copy to place the table values in the clipboard. This can then be pasted into another application such as Microsoft Excel. Select Dock to add to worksheet or OK to close. When docked, the value at the current cursor position is highlighted.

	0.500	0.600	0.700	0.800	0.900	1.000	1.100	1.200	1.300	1.400
	0.600	0.700	0.800	0.900	1.000	1.100	1.200	1.300	1.400	1.500
0 - 700	0	0	0	0.077	0.066	3.398	0.031	0	0.097	6.323
700 - 1400	0	0	0	0.417	1.800	1.077	0.093	0.014	0	0
1400 - 2100	0	0	0.003	0.412	4.386	1.109	0.022	0.015	0.005	0
2100 - 2800	0	0	0.085	0.245	2.600	0.621	0.010	0.010	0.007	0.015
2800 - 3500	0	0	0.924	0.911	5.204	1.159	0.100	0.040	0.035	0.979
3500 - 4200	0	0.018	0.250	2.864	9.427	0.923	0.219	0.093	0.085	5.505
4200 - 4900	0	0	0.289	11.673	8.325	0.575	0.254	0.218	0.315	6.737
4900 - 5600	0	0	0.229	5.868	9.624	0.394	0.182	0.146	0.221	1.389
5600 - 6300	0	0	0.017	0.902	0.902	0.008	0.003	0.006	0.004	0.005
6300 - 7000	0	0	0	0.009	0.027	0	0	0	0	0

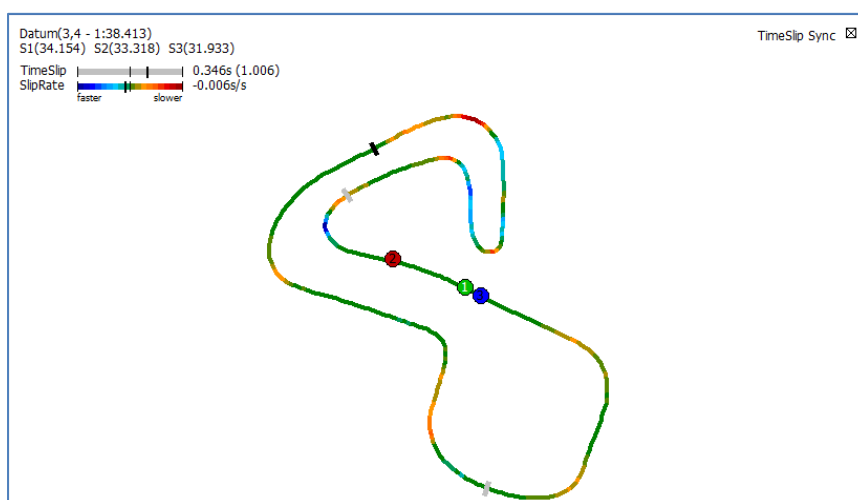
4.3.5 Sector Report

This report can only be used by a single file. With multiple files loaded, only the first file [0] is used. A Sector Report displays sector times throughout the session with the fastest sector and lap times displayed in green. The Optimum Lap Time displayed is the potential fastest lap using the total time of all the quickest sectors. When docked, the sector at the current cursor position is highlighted. The report can also be used to navigate through the session. Select a sector on the report to display just that sector on the main graph. Multiple consecutive sectors can also be selected.

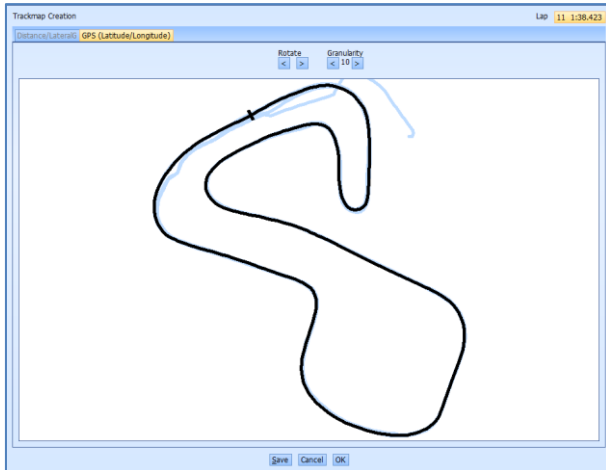
	Sector 1	Sector 2	Sector 3
Lap 0 0:36.467	0.000	0.000	0.000
Lap 1 1:42.530	35.679	34.319	32.531
Lap 2 1:40.776	34.877	33.924	31.974
Lap 3 1:39.807	34.380	33.416	32.011
Lap 4 1:40.136	34.491	33.632	32.012
Lap 5 1:39.892	34.341	33.463	32.086
Lap 6 1:40.392	34.335	33.857	32.199
Lap 7 2:01.397	0.000	0.000	0.000
Optimum Lap Time : 1:39.725			
Dock OK			

4.1 Track Map

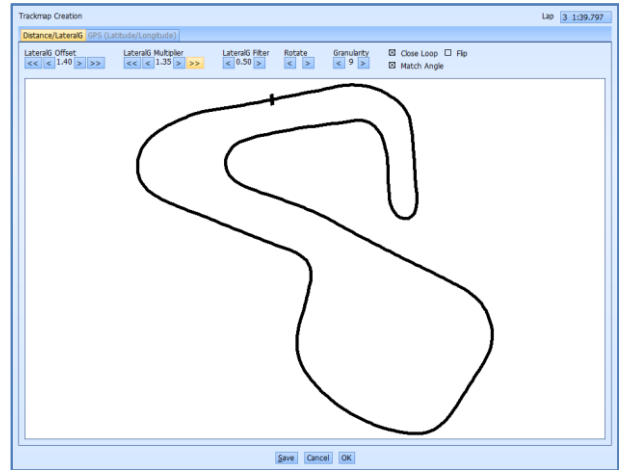
A track map can be displayed to show the vehicle position throughout the data. The vehicle icon will follow the map as the cursor is moved on the graph. Alternatively, the same icon can be dragged around the map and the cursor will follow. The icon will change its appearance when the vehicle is off track such as in the pits.



To add a track map to the worksheet, it can either be loaded or created under the *TrackMap* menu. Track maps can be created from GPS coordinates or calculated from distance and lateralG. Using the latter method will require some fine tuning of the various options. All recorded GPS positions will be displayed with the chosen lap emphasised. Calculated position will display the chosen lap only. By default, the fastest lap is used.



GPS (Latitude/Longitude)



Distance/Lateral G

Right click on the screen to bring up beacon options. This allows additional beacons to be added for sector times or the adding of an END beacon for sprint routes.

Once a track has been loaded it can be added to any other worksheet quickly using Add instead of load. Close the map by either selecting remove after right clicking or Close in the menu. Select Save to dock and store the created map. Saved track maps can be found in the main Life Racing folder. Select OK to dock without saving. Once docked, right click the map area to access display options or use the TrackMap menu.

Dynamic Remap (1)

Redraw the map for each lap, using the new data. GPS only.

Change Datum

Select the lap that time slip uses as its reference lap. Fastest lap is used by default.

Colour by TimeSlip

Colour by time slip from datum lap.

Colour by Item Value

Colour the map by any other item value.

TimeSlip Emphasis

Change the colour shift emphasis on the amount of time slip.

Rotate

Use the scroll bar or type an angle in degrees to rotate the map.

Print

Print an image of the track map as currently displayed, including car locations and applied colours.

TimeSlip Sync

With this box ticked, the TimeSlip item channel will be synchronised with the map time slip. When unchecked, a new datum for the map must be chosen as the channel and the map datum will now be independent. Channel datum can be changed in the Channel menu.

5 Options

5.1 Session

The Session menu contains options for the current open files.

Open Windows Explorer

Open file location in windows explorer.

Comment

Edit the Logfile comment.

Reset Offsets

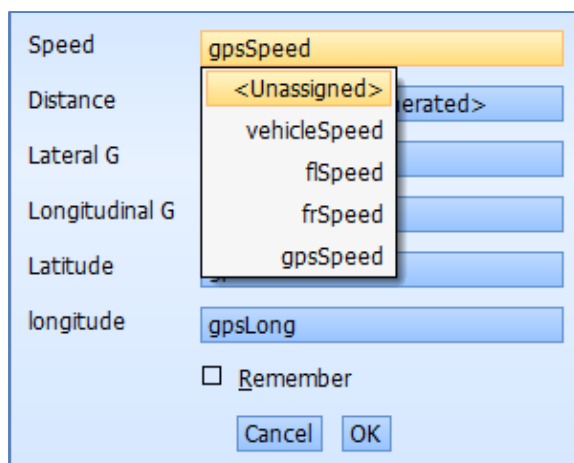
Return any offsets of overlaid files.

GPS Preferences

Alter GPS offset time and filter rate for either the open file only or as defaults for all files.

Special Channels

Choose what monitoring items will be used as special channels. It is these channels that are used to calculate vehicle position. Tick Remember to set as defaults.



Beacons

Select where to take beacon information from; the track map or data. When a track is created, it stores the beacon position from the data plus any beacon alterations done. It is these that are used by default.

File beacons can also be edited. They can be added, moved or removed completely with the appropriate menu options. Alternatively, select *make beacons persistent* to overwrite the file beacons with the map beacons.

copy Info to clipboard

Copy specific file information so that it can be pasted in another programme. If more than one file is open, the active file (shown in the information panel) is used.

5.2 Toggle Options

Toggle options are found under *Options, All Toggle Options*.

Time of day on X-axis

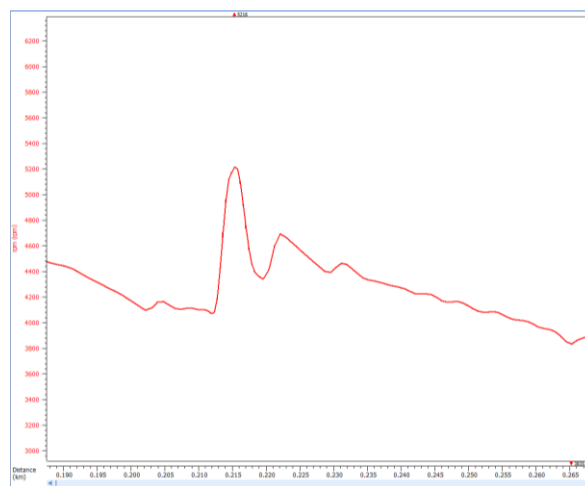
Display time of day or time into session.

Distance Mode

Toggle the X-axis between time and distance. Distance is often more useful when comparing multiple data sets.

Interpolate Mode

Toggle between displaying raw or interpolated data. Interpolation fills the space between data points with estimated values, creating a smoother look, particularly for low logging rates. However, as these values are estimated, they may not be an accurate representation.



Minimum Key Style Mode

Toggle between displaying all channels and displaying only active channels.

Show Item Names

Show active items in the top left corner of the graph display in their line colours.

All Min Max Mode

Toggle whether to show just the select channel max and min values or all active channels.

Bright Key

With bright key deactivated, any unused channels on display in the key will be dimmed.

Bold Focus Trace

The selected channel is always brought to the front of the display. This toggle will also cause the selected channel to have a bolder trace than the others for clearer viewing.

Shared channel colour per session

With this selected, whenever additional files are overlaid, each file will be assigned a single colour to all of its channels. If unselected, each file will display the same defaulted colours for each channel.

Average on Focus

Show the average of the selected channel in the visible period.

Averaged Samples Mode

Average samples mode will display only the average value for each channel in the visible area.

The most commonly used toggles are also available directly under the *Options* menu to allow quick key presses.

Time/Distance Toggle

Interpolate Toggle

Key Style Toggle

5.3 Cursor Options

Cursor options are found under *Options, Cursor Options*.

Enable Cursor Acceleration

Continuously speed up cursor movement the longer an arrow key is held.

Limit Cursor Acceleration

Limit the cursor to a finite speed chosen with the scroll bar.

Channel Info Tooltip

Display channel name and value at the point the mouse cursor is hovering over.

Right Mouse Zooming

Allow or disable selection zooming by dragging with the right mouse button.

Cursor Crosshair

Toggle the horizontal crosshair. This line will follow the value of the selected channel at the cursor time position.

Manual Cursor Crosshair

Crosshair follows mouse pointer rather than data values.

5.4 Concatenated File Options

Concatenated file options can be found under *Options, Concatenated File Options*.

Enable default concatenation actions

Enable to skip dialogue options during concatenation.

Preserve time gaps

Keep gaps between log files automatically.

Collapse time gaps

Eliminates gaps between log files automatically.

5.5 Global Options

Global options affect all applications and can be found under *File, Global Options*.

Black-on-White colour scheme

Toggle the colour scheme of all Life Racing applications between a white background and a black background. The best option will be dependent on screen quality, ambient lighting and user preference.

Colour Blind (yellow/green)

Changes fixed yellows to purple to aid with yellow/green confusion.

Reverse Folder Order (in file menu)

Folders are ordered alphabetically in the file menu. Tick this box to reverse this order.

Floating Mouse Focus (in dialogs)

Causes whatever the mouse pointer is hovering over to be highlighted as if it was selected with the keyboard.



6 Document Revision History

2015-07-21 – MH V1.0 – Initial public release

2015-10-08 – MH V1.1 – Added Sector Report

Added Workbooks & Worksheet tabs

2015-12-22 – MH V1.2 – Updated Working Directory